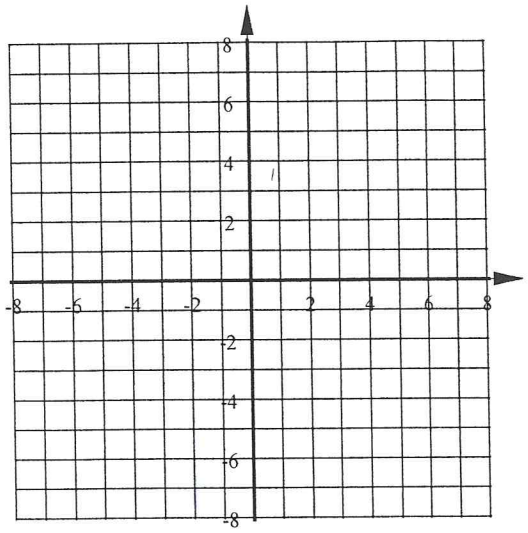
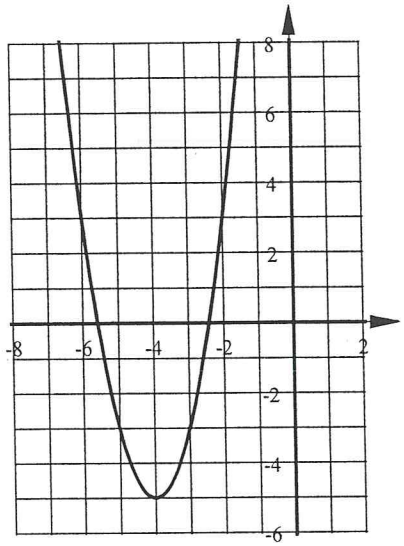
Algebra 2 Bellwork Wednesday, October 22, 2014

1. Graph this quadratic using 5 points.

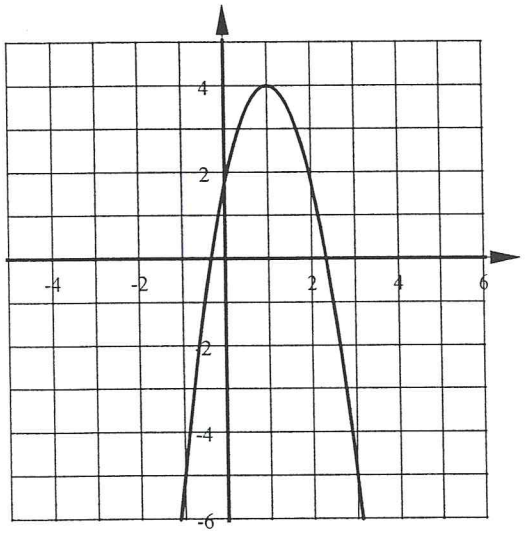
$y = -4(x-3)^2 + 8$



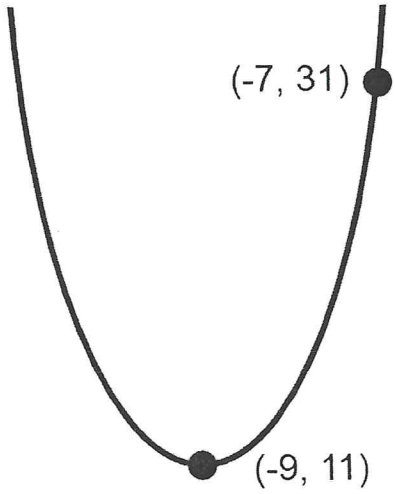
2. Write the equation of this quadratic



3. Write the equation of this quadratic



4. Write the equation of this quadratic



5. The vertex of a parabola is $(5,8)$ and it passes through the point $(2,-10)$ Write the equation of this parabola.

6. The vertex of a parabola is $(-6,-1)$ and its y-intercept is 13. Write the equation of this parabola.

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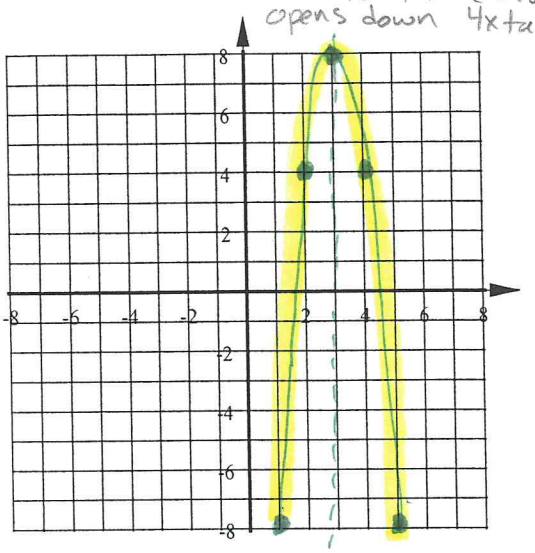
Answers

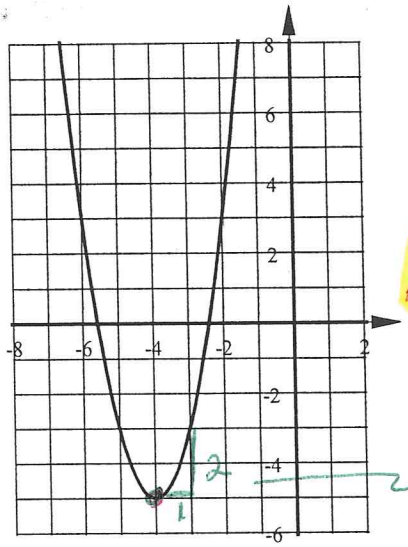
1. Graph this quadratic using 5 points.

$y = -4(x-3)^2 + 8$

3 RIGHT 8 up
Vertex (3, 8)
opens down 4x taller



2. Write the equation of this quadratic



4 left 5 down
Vertex: (-4, -5)

$y = a(x+4)^2 - 5$

$y = 2(x+4)^2 - 5$

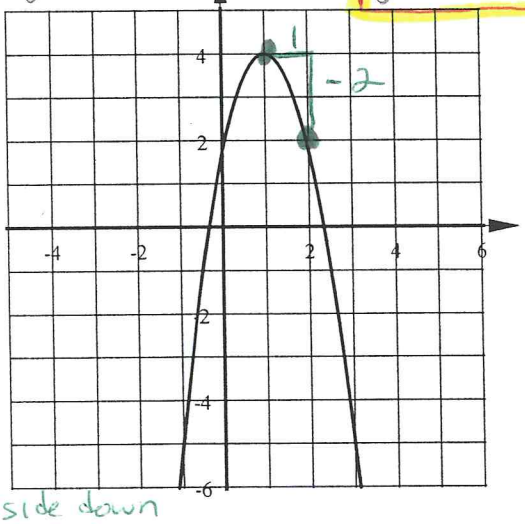
parent: 1 | THIS Graph: 2

TWICE AS TALL $a = 2$

3. Write the equation of this quadratic

$y = a(x-1)^2 + 4 \rightarrow y = -2(x-1)^2 + 4$

1 RT 4 up
Vertex (1, 4)



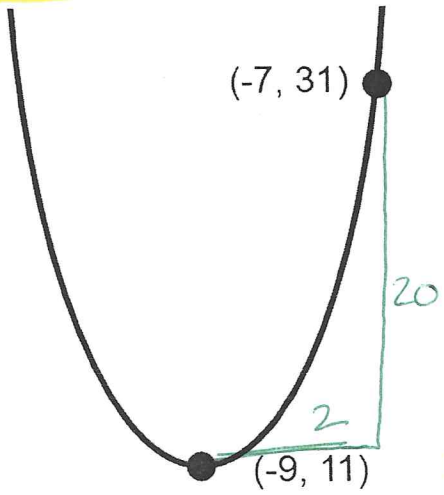
parent: 1

This graph: -2

$a = -2$

Twice as tall & upside down

4. Write the equation of this quadratic



Vertex (-9, 11)
9 left 11 up

$y = a(x+9)^2 + 11$

parent: 4 | this function: 20

5x taller

$a = 5$

$y = 5(x+9)^2 + 11$

5. The vertex of a parabola is $(5, 8)$ and it passes through the point $(2, -10)$. Write the equation of this parabola.

Vertex (5, 8)
5 right 8 up $\rightarrow y = a(x-5)^2 + 8$

replace x with 2 & y with -10 then solve for a

$-10 = a(2-5)^2 + 8$

$-10 = 9a + 8$

$-18 = 9a$

$-2 = a$

$y = -2(x-5)^2 + 8$

6. The vertex of a parabola is $(-6, -1)$ and its y-intercept is 13. Write the equation of this parabola.

Vertex (-6, -1)
6 left 1 down

$y = a(x+6)^2 - 1$

y-int = 13 $\rightarrow$ (0, 13)

replace x with 0 & y with 13 then solve for a

$13 = a(0+6)^2 - 1$

$13 = 36a - 1$

$y = 7/18(x+6)^2 - 1$